

in the foam **604c** parallel to the long sides of the panel **600c**, and a landscape version (FIG. 6D) with the grooves **605d** in the foam **604d** parallel to the short sides of the panel **600d**.

Alternatively, as shown by panel **600e** in FIG. 6E, grooves **605e** in foam **604e** may be oriented in a diagonal or other off-vertical direction to accommodate variable direction installation while enabling gravity assisted drainage. Although the direction vector of the grooves has a vertical component, the grooves **605e** are oriented in a direction that is not parallel or perpendicular to side edges of the panel **605e**. In one embodiment, a pair of grooves **607** and **609** are placed along two sides of the panel **600e**, to modulate drainage of water from sides of the panel. For example, if the panel is mounted in portrait format, groove **607** drains water from the upper grooves **605** having their bottoms along the side of the panel. If the panel is mounted in landscape format (with groove **609** on the right), groove **609** drains water from the upper grooves **605** having their bottoms along the side of the panel.

The grooves or channels **605** in the foam could be any width and depth. The spacing between the grooves **605** may be any distance, and may be varied within a single section of siding, a shake, a soffit, a roofing tile or shingle, or a panel **600**. The ratio between the portion of the foam covered by grooves **605** and the non-grooved portions **607** (which may be otherwise flat, e.g., curved or textured surfaces) of the foam between the grooves may be varied. And the portions between grooves are not required to be straight, but can be wavy, for example. Although the illustrated grooves **605** have a substantially semi-circular cross section, other groove or channel cross-sectional shapes may be used, such as, for example, semi-elliptical, rectangular or V-shaped grooves.

Preferably, the grooves or channels **605** face away from the substrate **602**, so that the entire major surface of the foam **604** facing the substrate **602** can be bonded to the substrate. This allows a simpler bonding operation, and better bonding. In other embodiments (not shown), the grooves or channels face the substrate. In still other embodiments (not shown), the grooves may be provided on both major surfaces of the foam. Respective pairs of grooves on both major faces may be directly opposite each other, or they may be interleaved, or mixed in relative configuration.

A method of using an exemplary product comprises: providing a unitary panel, section of siding or shake, the panel, section of siding or shake including a fiber cement substrate and a porous, closed cell foam bonded to a substantial portion of a major surface of the fiber cement substrate, and mounting the panel, section of siding or shake on a building surface. The exemplary products can be fastened to the building by a variety of fasteners, including, but not limited to, nails, staples, screws, and the like or, alternatively adhesive means such as, for example, glues or tapes.

In some embodiments (as described above with reference to FIGS. 3A and 3B), the foam is tapered from a relatively large thickness adjacent the narrow region not covered by the foam to a relatively small or substantially zero thickness at a second edge of the substrate. The second edge of the substrate is one of the two longest edges, and is opposite the edge that is adjacent the narrow uncovered region. When the foam is thus tapered, the method of using the product further comprises: overlapping a second section of siding or shake with the first section of siding or shake, so that a rear surface of the foam on each of the first and second sections of siding or shakes contacts the building surface.

If the foam covers a rear surface of the siding or shake, except in a region where the section of siding or shake is to overlap a neighboring section of siding or shake (e.g., as shown in FIG. 2C), the mounting step includes positioning the section of siding or shake so that a rear major surface of the foam contacts the building surface and acts as a spacer to position the region of the section of siding or shake at a non-zero distance from the building surface.

If the foam faces the front (as shown in FIG. 2D), the mounting step includes using the foam as a spacer. The top edge of the foam may possibly also be used as an indicator for positioning of a subsequently applied panel. That is, a second panel **200** would be mounted with the top of the slots **202s** below the top edge of the immediately preceding panel (the adjacent panel immediately below). This way, the top edge of the adjacent panel immediately below is not visible through the slots **202s**.

If the foam covers a rear surface of the siding or shake, except in a region where the section of siding or shake is to overlap a neighboring section of siding or shake (FIG. 2C), then the mounting step includes positioning the section of siding or shake so that a bottom edge of the foam rests on a top edge of an adjacent section of siding or shake. If foam is on the front (FIG. 2D), the bottom edge of the foam is at or above the bottom edge of an overlaid adjacent section of siding above the panel (preferably the upper edge of the foam is at or above the top of the slots of the overlaid adjacent panel. Then the foam is continuously visible along the length of the slots from top to bottom, and the top edge of the foam is hidden.

Although the invention has been described in terms of exemplary embodiments, it is not limited thereto. Rather, the appended claims should be construed broadly, to include other variants and embodiments of the invention, which may be made by those skilled in the art without departing from the scope and range of equivalents of the invention.

What is claimed is:

1. A method of mounting a first panel section and a second panel section of siding, shingle or shake to a building surface, wherein the method comprises:

providing or obtaining the first panel section and the second panel section of siding, shingle or shake, wherein each of the first and second panel sections comprises:

- (i) a plurality of substrates each containing fibers in a cement matrix and including a major surface, and
- (ii) a single porous, closed cell foam covering and bonding to a portion of the major surface of the plurality of substrates to provide a covered region, the plurality of substrates being separated apart along the foam by slots, the foam being uncovered and exposed at the slots, the covered region of each substrate comprising a top edge and a bottom edge, and an overlap region of said substrates, the overlap region being uncovered by said foam, said foam having closed cell polymer beads, wherein the beads are fused to one another at their tangent points and provide interstices between the beads, wherein the porous, closed cell foam is uniformly tapered from a thickness at the bottom edge to a smaller thickness at the top edge;

mounting each of said first and second panel sections to the building surface with said foam being disposed behind said substrates, which provides moisture drainage behind said substrates by way of the interstices between the beads; and